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Horvath et al.

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(54) **γ -CRYSTALLINE FORM OF IVABRADINE HYDROCHLORIDE, A PROCESS FOR ITS PREPARATION AND PHARMACEUTICAL COMPOSITIONS CONTAINING IT**

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Related U.S. Application Data

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(30) **Foreign Application Priority Data**

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(51) **Int. Cl.**

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(52) **U.S. Cl.** **514/212.07; 540/523**

(58) **Field of Classification Search** 540/523;
514/212.07

See application file for complete search history.

(56) **References Cited**

FOREIGN PATENT DOCUMENTS

EP O534859 3/1993

OTHER PUBLICATIONS

Preliminary Search Report for French National Application FR0501989, Jun. 24, 2005.

Ferrari, et al., *European Heart Journal Supplements*, 2005, 7 (Supplement H), H16-H21.

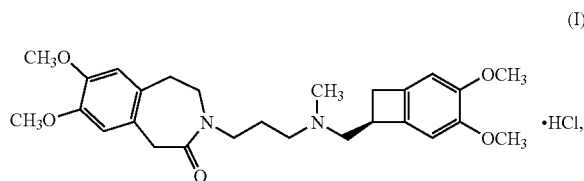
Fox, *European Heart Journal Supplements*, 2005, 7 (Supplement H), H33-H36.

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(57) **ABSTRACT**

A γ -Crystalline form of ivabradine hydrochloride of formula (I):



characterised by its powder X-ray diffraction data.

Medicinal products containing the same which are useful as bradycardics.

6 Claims, No Drawings